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# Intellectual property rights flowing from universities: an analysis of the impact of the current South African legal framework on international research collaboration

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## 1 Introduction

Researchers employed by South African universities often collaborate with other international research institutions.<sup>1</sup> Subject to the granting of sufficient funding, they do exciting and potentially ground-breaking research together in their interested fields of study. Once a funder accepts a proposed research project, each collaborator typically receives a percentage of the funding to participate in the project and perform a portion of the research. During the term of the project, the collaborators may possibly create new intellectual property, individually or jointly. However, before the project can commence and the funding can be distributed, the funder usually requires each of the collaborators to sign an agreement containing intellectual property rights clauses, addressing the ownership and, where applicable, the commercialisation of the intellectual property created by the collaborators. At the least, it will contain clear, defined rules providing for access to the intellectual property.

This scenario is an illustration of only one of various types of international research agreements South African universities need to enter into, before collaborative research activities can commence. As the nature of the work is research, it is not always possible to determine beforehand whether registerable intellectual property, non-registerable intellectual property, jointly created intellectual property or a combination of two or more will result from a research project, but in most cases, international funders and collaborators require a default position to govern the intellectual property. On the other hand, South African legislation such as the Currency and Exchanges Act 9 of 1933 and its Exchange Control (“Excon”) Regulations,<sup>2</sup> as well as the Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008 and its regulations,<sup>3</sup> require a South African university to obtain all the applicable regulatory approvals, before the

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<sup>1</sup> An individual university seldom possesses all the expertise and resources in order to maximise effective research and it therefore needs to collaborate with other research institutions. Research collaboration is an accepted practice and norm South Africa also follows, by partnering with researchers from all over the world; Sooryamoorthy “Scientific collaboration in South Africa” 2013 *South African Journal of Science* 14.

<sup>2</sup> *GG Extraordinary* 123 (01-12-1961) amended up to *GG* 35430 (08-06-2012).

<sup>3</sup> *GG* 33433 (02-08-2010).

university may proceed with the signing of an international research agreement. This article attempts to highlight the potential impact of South African legislation on intellectual property transactions between universities and their international research collaborators and funders.<sup>4</sup>

## 2 Research at universities

### 2.1 Research

The *Frascati Manual*<sup>5</sup> defines research and experimental development as “creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge”.<sup>6</sup>

The manual sets out five criteria of a research and experimental development activity, stating it must be: novel – meaning new knowledge or new advancements in knowledge; creative – meaning new concepts or ideas that improve on existing knowledge; uncertain – the outcome and cost cannot be precisely determined relative to the goals; systematic – conducted in a planned way, with records of the process followed and the outcome; transferable and/or reproducible – should result in the potential for the transfer of new knowledge, ensuring use and reproduction by other researchers.<sup>7</sup>

It further explains that research and experimental development can be categorised into three types of activities: basic research, applied research and experimental development and it defines these three types of activities as follows:

“*Basic research* is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view. *Applied research* is original investigation undertaken in order to acquire new knowledge. It is however directed primarily towards a specific, practical aim or objective. *Experimental development* is systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or improving existing products or processes.”<sup>8</sup>

At universities, all three types of research may be carried out in the same unit or department, and by the same researchers.<sup>9</sup> An evaluation of the research project and the expected results should indicate the types of research involved.<sup>10</sup> Academic staff perform research and experimental development at universities as part of their employment at the university and students (usually postgraduate students and post-doctoral fellows), as part of their studies, which could lead to the creation of intellectual property.

<sup>4</sup> Collaboration with and funding from local entities also occur and may be impacted by the same legislation to a certain extent, but will not be discussed in this article.

<sup>5</sup> *Guidelines for Collecting and Reporting Data on Research and Experimental Development (Frascati Manual)* (2015). The definitions provided in the *Frascati Manual* have been adopted by many governments and various organisations world-wide and serve as a common language for discussions of science and technology and economic development policy, and has become an acknowledged standard in research and experimental development studies.

<sup>6</sup> *Frascati Manual* (n 5) 44.

<sup>7</sup> *Frascati Manual* (n 5) 45-48.

<sup>8</sup> *Frascati Manual* (n 5) 47.

<sup>9</sup> *Frascati Manual* (n 5) 53.

<sup>10</sup> *Frascati Manual* (n 5) 53.

## 2.2 Universities

Worldwide, universities are not only institutions of higher or tertiary education anymore, but also institutions engaging in research and experimental development activities.<sup>11</sup> Most academic staff not only teach, but also conduct research,<sup>12</sup> and train students to engage in research.<sup>13</sup> Universities are critical for the creation of the scientific foundation and the research and experimental development activities necessary to connect with the global knowledge generation.<sup>14</sup> They also provide the skills and labour force needed for technology transfer and development.<sup>15</sup> With a wide range of disciplines and specialisation fields, academic staff conduct interdisciplinary research, and combine basic research with applied research.<sup>16</sup> They often become experts in their fields, acting as consultants and advisors for the community, industry and government.<sup>17</sup> Their contributions make it possible for their countries to actively participate and compete in the global knowledge economy.<sup>18</sup>

Not only is the academic environment enriched by the link between teaching and research, but countries have realised that research at universities is generating enthusiasm and gaining importance for national social-economic development.<sup>19</sup> In an effort to reach and maintain research university status, national policy makers in developing countries and interested parties, such as the World Bank and international funding agencies, are placing research universities on the policy agenda.<sup>20</sup> Initiatives such as the African Higher Education and Research Space (AHERS) confirm that Africa's higher education sector must be part of the knowledge economy and seek to overcome the challenges to reach this objective.<sup>21</sup> Universities in African countries are specifically entering a stage where they are expected to interact more with industry as well as other organisations, in terms of consultancy, research contracts and commercialisation of inventions, innovations and research findings.<sup>22</sup> Four out of five of Africa's top research universities are in South Africa.<sup>23</sup> It is therefore not surprising that Universities South Africa,<sup>24</sup> the representative organisation for South Africa's public universities, adopted the Strategic Framework for Universities South Africa, 2015-2019, on 22 October 2014 listing the goals to strengthen and

<sup>11</sup> Castells "The university system: engine of development in the new world economy" in Salmi and Verspoor *Revitalizing Higher Education – Issues in Higher Education* (1994) 6.

<sup>12</sup> *Frascati Manual* (n 5) 265.

<sup>13</sup> Altbach "Advancing the national and global knowledge economy: the role of research universities in developing countries" 2013 *Studies in Higher Education* 316 322.

<sup>14</sup> Castells (n 11) 6-8.

<sup>15</sup> Castells (n 11) 6-8.

<sup>16</sup> Altbach "Peripheries and centers: research universities in developing countries" 2009 *Asia Pacific Education Review* 15 18.

<sup>17</sup> Altbach (n 13) 322.

<sup>18</sup> Altbach (n 13) 317.

<sup>19</sup> Altbach (n 13) 317.

<sup>20</sup> Altbach (n 13) 317.

<sup>21</sup> Mohamedbhai "Towards an African higher education and research space – a summary report" (30-01-2013) [http://www.adeanet.org/en/system/files/resources/ahers\\_summary\\_report.pdf](http://www.adeanet.org/en/system/files/resources/ahers_summary_report.pdf) (30-11-2017).

<sup>22</sup> *World Intellectual Property Organization Guidelines on Developing Intellectual Property Policy for Universities and Research and Experimental Development Institutions in African Countries* (World Intellectual Property Organization [http://www.wipo.int/edocs/pubdocs/en/intproperty/489/wipo\\_pub\\_489.pdf](http://www.wipo.int/edocs/pubdocs/en/intproperty/489/wipo_pub_489.pdf) (30-11-2017).

<sup>23</sup> Bothwell "South African institutions top THE Africa rankings pilot" (9-07-2015) *Times Higher Education World University Rankings* <https://www.timeshighereducation.com/news/south-african-institutions-top-rankings-pilot> (30-11-2017).

<sup>24</sup> formerly known as Higher Education South Africa (HESA).

support research and experimental development activities.<sup>25</sup> Numerous government initiatives, policies and plans (such as the department of science and technology Ten Year Innovation Plan<sup>26</sup> and the National Development Plan<sup>27</sup>) were also introduced in the last two decades, setting high objectives for the innovation system in South Africa in order to move towards a growing knowledge economy.<sup>28</sup> Attainment of these goals rests in great part on universities.<sup>29</sup> The ultimate research output measure – the number of PhD degrees and peer-reviewed publications – is especially important for university rankings and for funding purposes.<sup>30</sup>

All public universities in South Africa conduct research to a greater or a lesser extent.<sup>31</sup> Though various types of universities exist, such as “traditional” research-focused universities, and “universities of technology”,<sup>32</sup> the definition of “universities” in this article captures all research and experimental development activities in the sector and refers to all research chairs, units, centres, laboratories, departments and faculties that conduct research under the direct control of, or are administered by, higher education institutions in South Africa.

### 3 Importance of international research collaboration

#### 3.1 Globalisation and internationalisation

Universities throughout the world are undergoing various changes to adapt to a global and knowledge-based economy.<sup>33</sup> The knowledge they produce, the academics they employ, and the students they graduate, are all directly connected to this global knowledge economy.<sup>34</sup> Universities globalise for many reasons, such as to improve the quality and quantity of research outputs, to improve international ratings through publications, to produce competent professionals, to improve international competitiveness and to ensure development and growth.<sup>35</sup> The concept of globalisation gives rise to the prominence of international research collaboration.<sup>36</sup> Due to the growing number of international agreements between tertiary institutions, scholarship and fellowship programmes, collaborative projects,

<sup>25</sup> Universities South Africa “Strategic framework for Universities South Africa, 2015-2019” (22 Oct 2014) <http://www.usaf.ac.za/wp-content/uploads/2016/11/Strategic-Framework-for-Universities-South-Africa-2015-2019.pdf> (30-11-2017).

<sup>26</sup> Department of Science and Technology *Ten-year Innovation Plan* (2007) [http://www.esastap.org.za/download/sa\\_ten\\_year\\_innovation\\_plan.pdf](http://www.esastap.org.za/download/sa_ten_year_innovation_plan.pdf) (20-08-2016).

<sup>27</sup> National Development Plan – 2030 (NDP) <http://www.gov.za/sites/www.gov.za/files/Executive%20Summary-NDP%202030%20-%20Our%20future%20-%20make%20it%20work.pdf> (30-11-2017).

<sup>28</sup> Pouris “Science in South Africa: the dawn of a renaissance?” 2012 *SAJS* 1.

<sup>29</sup> Kahn, Vlotman, Steyn and Van der Schyff “Innovation policy and higher education in South Africa: addressing the challenge” 2007 *South African Review of Sociology* 176-177.

<sup>30</sup> Kahn *et al* (n 29) 177.

<sup>31</sup> International Education Association of South Africa (IEASA) “Higher education in context – South African higher education: facts and figures” (13-07-2012) [http://ufisa.aalto.fi/en/network/cput/facts\\_figures\\_section.pdf](http://ufisa.aalto.fi/en/network/cput/facts_figures_section.pdf) (30-11-2017).

<sup>32</sup> IEASA (n 31).

<sup>33</sup> Popescu “South African globalization strategies and higher education” 2015 *Social and Behavioral Sciences* 411.

<sup>34</sup> Altbach, Reisberg and Rumbley “Trends in global higher education: tracking an academic revolution sense” (2010 report prepared for the UNESCO 2009 World Conference on Higher Education, Rotterdam) 24.

<sup>35</sup> Popescu (n 33) 417.

<sup>36</sup> Altbach *et al* (n 34) 24.

as well as meetings and conferences, researchers increasingly move around the globe.<sup>37</sup>

Likewise, internationalisation provides many benefits, such as access to knowledge, skills, facilities, infrastructure, funding and exposure to an international network of contacts.<sup>38</sup> In addition, long-term collaborative activities with foreign research partners have significant impacts, such as the increased production of research publications and obtaining funding from international sources.<sup>39</sup> Leading research universities in Africa also follow international standards of scientific quality and research productivity, often by engaging in international research collaboration.<sup>40</sup> The latest data available indicates that South African universities produce nearly 64 percent of all African research outputs and enjoy significant prominence in six fields of study.<sup>41</sup> It is therefore necessary to create partnerships with government, industry, other universities and research institutions (locally and internationally) to ensure that research at South African universities remains relevant and applicable in practice globally. This includes building on the primary research of partners, supporting applied research and technology collaborations and creating links to encourage commercialisation and innovation.<sup>42</sup> Universities South Africa<sup>43</sup> specifically made a commitment to work closely with the International Education Association of South Africa (IEASA), to lobby government to develop and implement an internationalisation policy framework to facilitate collaboration of South African universities and their international counterparts, to engage in joint research projects.<sup>44</sup>

### 3.2 Funding

In South Africa, government provides two types of research funding to universities: “core” and “project” funding.<sup>45</sup> Core funding refers to state support for the core business of universities, generally teaching and learning, research and community engagement.<sup>46</sup> Universities receive core funding annually, calculated in terms of the number of students and staff, infrastructure, etc. They also receive funding based on performance, measured by research output.<sup>47</sup> Project funding, also referred to as competitive funding, may be awarded on the acceptance of a winning research project proposal. In this case, the funds are earmarked for a dedicated area and involve project deliverables and outcomes.<sup>48</sup> Public funding received from the

<sup>37</sup> Altbach *et al* (n 34) 24.

<sup>38</sup> Tijssen “Research output and international research cooperation in African flagship universities” in Cloete, Maassen and Bailey *Knowledge Production and Contradictory Functions in African Higher Education* (2015) 61.

<sup>39</sup> Tijssen (n 38) 62.

<sup>40</sup> Tijssen (n 38) 61.

<sup>41</sup> Popescu (n 33) 415.

<sup>42</sup> Popescu (n 33) 415-416.

<sup>43</sup> (n 25).

<sup>44</sup> (n 25).

<sup>45</sup> Luruli and Mouton “The early history of research funding in South Africa: from the research grant to the FRD” 2016 *SAJA* 1; Ministry of Education “A new funding framework: how government grants are allocated to public higher education institutions” (2004) [http://www.gov.za/sites/www.gov.za/files/fundframework\\_0.pdf](http://www.gov.za/sites/www.gov.za/files/fundframework_0.pdf) (30-11-2017).

<sup>46</sup> Luruli and Mouton (n 45) 1.

<sup>47</sup> Luruli and Mouton (n 45) 1.

<sup>48</sup> Luruli and Mouton (n 45) 1.

government is the most important income stream,<sup>49</sup> but on average a university receives only 50 percent of its total revenue from the state,<sup>50</sup> and this percentage has been declining due to various factors.<sup>51</sup>

The decline in government subsidies puts pressure on the other two sources of revenue available to universities, *ie* tuition fees and third-stream income (research grants, contract income, donations, etc).<sup>52</sup> Besides the pressure on other sources, the five key policy goals in the National Plan on Higher Education (NPHE 2001) released by the department of education in March 2002,<sup>53</sup> which includes sustaining and promoting of research, cannot be achieved without funding.<sup>54</sup> Universities therefore made adjustments to tuition fees in recent years to try to ensure cost recovery and revenue generation, but this source does not fully supply a university with the additional income it needs.<sup>55</sup> Furthermore, the reliance on tuition fees was placed in jeopardy when students from universities across South Africa embarked on a series of protest actions, known as the “fees must fall” movement.<sup>56</sup> It led to the initial zero increase on tuition fees for 2016.<sup>57</sup> This turn of events resulted in a shortfall in universities’ budgets and even though government did come through with a portion of the shortfall, it resulted in additional pressure on the already constrained budgets of universities.<sup>58</sup> Since then, more protests and the continued demand for free education<sup>59</sup> have been placing government under immense pressure to find a way to adhere to the students’ demands.<sup>60</sup> Researchers, in turn, are concerned about the funding shortfalls, as they depend on government and university revenue to launch their programmes and run their labs.<sup>61</sup> It is still unclear what will transpire in the future, but that universities will have to exploit third stream income to survive as effective research organisations seems inevitable.

<sup>49</sup> Wangenge-Ouma and Cloete “Financing higher education in South Africa: public funding, non-government revenue and tuition fees” 2008 *SAJHE* 906 907.

<sup>50</sup> Wangenge-Ouma and Cloete (n 49) 907.

<sup>51</sup> Wangenge-Ouma and Cloete (n 49) 908.

<sup>52</sup> (n 25).

<sup>53</sup> The NPHE policy goals are listed as 1) producing the graduates needed for social and economic development in South Africa; 2) achieving equity in the South Africa higher education system; 3) achieving diversity in the South African higher education system; 4) sustaining and promoting research; and 5) restructuring the institutional landscape of the higher education system. It emphasises that research within higher education institutions should promote the kinds of research and other knowledge outputs that are required to meet national development needs, which will enable the country to become competitive in a new global context.

<sup>54</sup> Wangenge-Ouma and Cloete (n 49) 906.

<sup>55</sup> Wangenge-Ouma and Cloete (n 49) 910.

<sup>56</sup> Report of the Commission of Enquiry into Higher Education and Training to the President of the Republic of South Africa (released on 13-11-2017) 9-15.

<sup>57</sup> (n 56) 15.

<sup>58</sup> Davis “Zero fees increase means R2.33bn shortfall” *Eyewitness News* (4-11-2015) <http://ewn.co.za/2015/11/04/0-fees-increase-means-2-33bn-shortfall> (30-11-2017); Govender “Varsities brace for fee increase as SASCO warns of ‘worse’ protests than last year” *Mail and Guardian* (21-07-2016) <http://mg.co.za/article/2016-07-21-00-varsities-brace-for-fee-increase-as-sasco-warns-of-worse-protests-than-last-year> (30-11-2017).

<sup>59</sup> (n 56) 15-26; Mabuza “Is this the start of Fees Must Fall protests?” *Sunday Times* (25-10-2017) <https://www.timeslive.co.za/news/south-africa/2017-10-25-is-this-the-start-of-fees-must-fall-protests/> (15-12-2017).

<sup>60</sup> (n 56) 104-148.

<sup>61</sup> Hayden “South Africa’s political turmoil endangers research” 2016 *Nature* 207-208.



Income other than public subsidies (“first-stream income”) and tuition fees (“second stream income”) is grouped as third-stream income.<sup>62</sup> Third stream income generally consists of contract or sponsored research funding (“contract income”); entrepreneurial and commercial income (“sales of services”); philanthropic funding (“donations and gifts”);<sup>63</sup> and internal financing (“interest, dividends and income from investments”).<sup>64</sup>

While basic resources for research, such as infrastructure, can still be funded by a university’s own internal sources, funding for research and experimental development activities – specific research projects and the research consumables and fieldwork often involved – must usually be derived from various other external sources.<sup>65</sup> The greatest share of third-stream funding flows from local and international companies, philanthropic organisations, development agencies and non-governmental organisations through contract income.<sup>66</sup> It is noteworthy that a percentage of this revenue is sourced from foreign funding. The most recent, official annual South African National Survey of Research and Experimental Development for 2015/2016 indicated that foreign funding of research and experimental development in South Africa increased nominally from R3.566 billion to R4.210 billion between 2014/15 and 2015/16.<sup>67</sup> Higher education institutions received 28.7 percent of this foreign funding. This percentage will most likely increase further in the future. Since South Africa is seeking to enhance its research and experimental development performance as a key component of its economic growth strategy, it needs to involve all the factors in the system of innovation, including foreign funding. Through their knowledge infrastructure and producers of research personnel, universities are playing a central role in the internationalisation of research and experimental development and in attracting and sustaining foreign-funded research and experimental development.<sup>68</sup> Among the foreign funders, foreign industries are often interested in funding universities to promote a symbiotic relationship between universities and commerce – universities obtain funding and reputations for the research they conduct, and, in exchange, experts study and advise on the problems and challenges industry is facing.<sup>69</sup> The research and experimental development activities carried out by universities, specifically with funding from foreign industry partners commissioning research, are governed by research agreements that, among other things, lay out terms for the use and ownership of the intellectual property emanating from the research and experimental development activities and projects.<sup>70</sup>

<sup>62</sup> Craig and Abrahams “Exploring third stream funding for South African universities” (18-03-2009) *Universities South Africa* [http://www.usaf.ac.za/wp-content/uploads/2017/07/2009\\_HESA\\_Third-Stream-Funding\\_Report\\_July-09.pdf](http://www.usaf.ac.za/wp-content/uploads/2017/07/2009_HESA_Third-Stream-Funding_Report_July-09.pdf) (30-11-2017).

<sup>63</sup> Lately some universities started grouping philanthropic funding separately as “fourth stream income” and revenue from sales as “fifth-stream income”.

<sup>64</sup> (n 62).

<sup>65</sup> *Frascati Manual* (n 5) 126-130.

<sup>66</sup> Wolson “Technology transfer in South African public research institutions” in Krattiger, Mahoney, Nelsen *et al Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices* (2007) 1651 1655.

<sup>67</sup> South African National Survey of Research and Experimental Development, statistical report 2015/2016 (23-11-2017) <http://www.hsrc.ac.za/en/departments/cestii/reports-cestii> (15-12-2017).

<sup>68</sup> Kahn “Internationalization of research and experimental development: where does South Africa stand?” 2007 *SAJS* 7.

<sup>69</sup> Philip “South Africa research funding fourth-highest in the world” *Media Club South Africa* (22-01-2014) <http://www.mediaclubsouthafrica.com/tech/3660-south-african-research-funding-fourth-highest-in-the-world> (30-11-2017).

<sup>70</sup> Wolson (n 66) 1655.

As already pointed out, international collaboration and international funding are of significant importance for South African universities to partake in the global economy of research. The main challenge faced is that the operation and maintenance of a university, and specifically research at a university, are exceedingly expensive. Scientific equipment, information technology, access to worldwide knowledge and networks,<sup>71</sup> laboratories, well-equipped libraries, bursaries for students and salaries for expert professors are all costly.<sup>72</sup> Facilities, in particular, are essential to produce top-quality research.<sup>73</sup> The high cost of joining and sustaining participation in globalisation and the international league of research universities is especially a problem for developing countries, such as those in Africa.<sup>74</sup> It is thus crucial that universities have adequate and sustainable funding sources in order to succeed as research-oriented universities.<sup>75</sup> Unfortunately, government funding, together with tuition fees and funding from local entities, still does not suffice, making research and experimental development activities at South African universities increasingly dependent on foreign funding. Not only are the research and experimental development activities reliant on foreign funding, but a university as an institution needs this third-stream income to withstand the pressures on its budget. The agreements making provision for this third-stream income to flow to a university are thus of paramount importance.

#### 4 *Intellectual property at universities*

Intellectual property is intangible property resulting from creativity and innovation, and intellectual property law regulates the ownership and use of such creative works. In general, intellectual property rights relate to the traditional forms of intellectual property, such as patents, copyright, trade marks and designs, but they could also extend to lesser known rights, also considered intellectual property rights,<sup>76</sup> such as traditional knowledge, plant breeders' rights, confidential information, know-how, performers' rights, etc. These rights may be registered or unregistered and even non-registerable and furthermore, the "right" to an invention or novel work, is only an expectation, which could potentially crystallise into intellectual property rights.<sup>77</sup> In each instance, it is necessary to first determine to which genre of intellectual property an invention or a work belongs and then proceed to claim protection under the rules that govern the specific intellectual property category.

At universities the same principle applies: what exactly will be or was created by a researcher during the research conducted first needs to be determined, before the university proceeds to seek protection and enter into any related transactions. The intellectual property created at universities throughout the world and the legislation governing the intellectual property generally have the same basic principles as provided by the various international conventions, treaties and organisations such as the World Intellectual Property Organization. Intellectual property rights are, however, territorial in nature,<sup>78</sup> meaning that intellectual property rights vesting

<sup>71</sup> Altbach (n 16) 18.

<sup>72</sup> Altbach (n 13) 329.

<sup>73</sup> Altbach (n 16) 18.

<sup>74</sup> Altbach (n 16) 21.

<sup>75</sup> Altbach (n 13) 329.

<sup>76</sup> Harms "The aftermath of *Oilwell (Pty) Ltd v Protec International Ltd*" 2013 *THRHR* 421 423.

<sup>77</sup> Harms (n 76) 423.

<sup>78</sup> Klopper, Pistorius, Rutherford *et al* *Law of Intellectual Property in South Africa* (2011) 107.



in intellectual property created at South African universities will be governed in the first place by South African legislation and further afield by foreign legislation which could vary from the position in South Africa. As a result, special provisions of South African law, relating for instance to ownership of intellectual property rights in South Africa, would not necessarily apply to that same item of intellectual property rights in other countries, depending on their own intellectual property legislation.

#### 4.1 Copyright

In South Africa, copyright protection establishes automatically for specified works, once certain criteria are met, and does not require some form of registration.<sup>79</sup> Works eligible for protection must be original and exist in a material form.<sup>80</sup> The Copyright Act does not provide any definition for the primary requirement that a work should be original. What is clear from case law wherein the courts had to interpret the meaning of “original” is that a work does not need to be inventive, novel or unique: it simply needs to be shown that they were not copied directly from another person or source and that independent skill and effort were applied.<sup>81</sup> The threshold for originality is thus really low.<sup>82</sup> Works such as musical works, artistic works, cinematography works, sound recordings, broadcasts, programme-carry signals and certainly computer programs could be, and are in some instances, created at universities during research and experimental development activities. However, overall, the bulk of research outputs eligible for protection by copyright would fall under the broader category “literary works”, as a “literary work” includes:

- “(a) novels, stories and poetical works;
- (b) dramatic works, stage directions, cinematograph film scenarios and broadcasting scripts;
- (c) textbooks, treatises, histories, biographies, essays and articles;
- (d) encyclopaedias and dictionaries;
- (e) letters, reports and memoranda;
- (f) lectures, speeches and sermons; and
- (g) tables and compilations, including tables and compilations of data stored or embodied in a computer or a medium used in conjunction with a computer, but shall not include a computer program.”<sup>83</sup>

For universities this means that the ideas and the facts created or gathered while research is conducted are not protected, but the expression of the information (research reports, data sets, surveys, etc) can be protected by copyright, if the necessary requirements are met. As such, copyright subsists in every single original expression the moment it is created.<sup>84</sup> Most researchers are creating copyright-protected works on a daily basis, probably without even realising it. As pointed out

<sup>79</sup> In South Africa, copyright is a creature of statute regulated by the Copyright Act 98 of 1978 and its regulations promulgated by GN R 2530 in GG 6252 (22-12-1978) amended up to GN R 1375 in GG 9807 (28-06-1985).

<sup>80</sup> s 2 of the Copyright Act.

<sup>81</sup> See among others *Saunders Valve Co Ltd v Klep Valves (Pty) Ltd* 1985 1 SA 646 (T); *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* 2006 4 SA 458 (SCA); *Accesso CC v Allforms (Pty) Ltd* 1998 4 All SA 655 (T); *Waylitz Diary CC v First National Bank Ltd* 1995 1 SA 645 (A) and *Kalamazoo Division (Pty) Ltd v Gay* 1978 2 SA 184 (C).

<sup>82</sup> Dean and Dyer *et al* *Introduction to Intellectual Property Law* (2014) 16.

<sup>83</sup> s 1(1) of the Copyright Act.

<sup>84</sup> Bailey “Why copyright matters in research” *iThenticate* (22-09-2014) <http://www.ithenticate.com/plagiarism-detection-blog/why-copyright-matters-in-research#V0SCKeQ2t-8> (30-11-2017).

later, copyright specifically presents some difficulties for universities in complying with relevant South African legislation governing intellectual property transactions.

## 4.2 Patents

Probably the best-known intellectual property right, a patent is a statutory right,<sup>85</sup> which provides for the protection of an invention. The invention should be a novel creation, resulting from human ingenuity. The Patents Act does not provide a definition for an invention, but lists only the specific exclusions. An invention could thus be anything that does not fall within this list of exclusions:

- “(a) a discovery;
- (b) a scientific theory;
- (c) a mathematical method;
- (d) a literary, dramatic, musical or artistic work or any other aesthetic creation;
- (e) a scheme, rule or method for performing a mental act, playing a game or doing business;
- (f) a program for a computer; or
- (h) the presentation of information”.

For a patent to be granted the invention needs to be new, involve an inventive step and be capable of being used or applied in trade or industry or agriculture.<sup>87</sup> An invention is deemed new if it does not form part of any prior art, worldwide, immediately before the filing of the first patent application in which the invention is disclosed. Prior art, or state of the art, is considered as all matter which has been available or accessible to the public,<sup>88</sup> without breach of confidentiality.<sup>89</sup> Prior art may include a product, a process, a lecture, a presentation, an article or publication, or any other information about the invention.<sup>90</sup> An invention shall be deemed to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which immediately before the priority date of the invention forms part of the state of the art.<sup>91</sup> Whether an invention lacks inventiveness is usually considered only once it is found that the invention is indeed novel. To determine a lack of inventiveness, a court may apply the test<sup>92</sup> that was set out in *Ensign-Bickford (South Africa) (Pty) Ltd v AECI Explosives & Chemicals Ltd*.<sup>93</sup> The requirement of whether an invention is capable of being used in or applied in trade or industry or agriculture is a mere question of fact and should be apparent from the invention itself.

<sup>85</sup> created by the Patents Act 57 of 1978 and its regulations, promulgated by GN R 2470 in GG 6247 (15-12-1978) amended up to GN R 1181 in GG 29413 (01-12-2006).

<sup>86</sup> s 25(2) of the Patents Act.

<sup>87</sup> s 25(1) of the Patents Act.

<sup>88</sup> s 25(6) of the Patents Act.

<sup>89</sup> In *McCauley Corporation Ltd v Brickor Precast (Pty) Ltd* 1989 BP 314 (CP) 335E, the court found that a disclosure must be non-confidential to be considered to be part of prior art. In practice a confidentiality agreement (also referred to as a non-disclosure agreement or NDA) is therefore signed to protect a party wishing to discuss or disclose the potential patentable invention to another party, prior to the filing of a patent. Should such a party disclose the invention to others, in breach of confidence, it will not be considered novelty-destroying.

<sup>90</sup> Dean and Dyer *et al* (n 82) 245.

<sup>91</sup> s 25(10) of the Patents Act.

<sup>92</sup> The test consists of four steps: 1 What is the inventive step said to be involved in the patent? 2 What was the state of the art, at the priority date of the patent, relevant to that step? 3 How does the step go beyond, or differ from, that state of the art? 4 Having regard to the further development or difference, would taking the step be obvious to the skilled man?

<sup>93</sup> 1998 BIP 271 (SCA); 1999 1 SA 70 (SCA).

At universities, the researchers are usually experts and very knowledgeable in their fields of study and should have a very good idea whether the outcome of their research can lead to patentable inventions. Often an idea or invention needs more research and experimental development work done, before it meets the criteria of a patent. In this event it will be treated as confidential information, which is discussed below. Researchers are encouraged not to publish or share these inventions without adequate protection, but first disclose it in confidence to the technology transfer office<sup>94</sup> of their university. The technology transfer office will conduct or authorise a patent search to determine whether the invention has been patented elsewhere in the world and whether the invention does not already form part of prior art. Should the coast be clear for the filing of a patent, the technology transfer office will appoint patent attorneys to proceed with the drafting and the filing of a patent on behalf of the university as applicant. After the filing of a patent, the invention is protected and will then be published and made available in the public domain, since patents are granted only in exchange for full disclosure of the invention.<sup>95</sup> At this stage, the researcher will also be free to publish at conferences or in scientific journals.<sup>96</sup> Only natural persons (the researchers, in the context of this article) who made an inventive contribution to the development of the invention may be listed as inventors.<sup>97</sup>

#### 4.3 Plant breeders' rights

Since the Patents Act specifically excludes protection for plant varieties and any essentially biological process for the production of plants, a need for legal protection in this area exists.<sup>98</sup> A plant breeder's right is therefore a right that can be obtained in respect of new plant varieties. In South Africa, a person qualifies to apply for such a right<sup>99</sup> if the person has bred, or discovered and developed, a variety of plant that is new, distinct, uniform and stable.<sup>100</sup> A plant variety is considered new when the propagating or harvested material of the plant has not been sold or disposed of by, or with the consent of, the breeder, for purposes of exploitation: a) in South Africa for more than one year; and b) in a convention country,<sup>101</sup> or a country with which South Africa has a bilateral agreement in place, in the case of: i) varieties of vines and trees, for more than six years, or ii) other varieties, for more than four years, prior to the date of filing the application for a plant breeder's right.<sup>102</sup> A plant variety is considered distinct when it is clearly distinguishable from any

<sup>94</sup> Technology transfer offices (TTOs) were initially set up at research institutions in line with international trends, even before any attempts by government were made (Wolson (n 66) 1651). TTOs at universities are currently established in terms of s 6 and 7 of the Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008 and function mainly to identify, protect, manage and commercialise intellectual property.

<sup>95</sup> s 42(3) of the Patents Act and Dean and Dyer *et al* (n 82) 239.

<sup>96</sup> s 43 and 45 of the Patents Act.

<sup>97</sup> Dean and Dyer *et al* (n 82) 252.

<sup>98</sup> Klopper *et al* (n 78) 337.

<sup>99</sup> In terms of the Plant Breeders' Rights Act 15 of 1976 and its regulations, promulgated by GN R 279 in GG 5788 (28-10-1977) amended up to GN R 1027 in GG 38320 (29-12-2014).

<sup>100</sup> s 2(1) and 6(1) of the Plant Breeders' Rights Act.

<sup>101</sup> Some 66 countries and the European Union are members of the International Union for the Protection of New Varieties of Plants (UPOV), which was established by the UPOV convention (The International Convention for the Protection of New Varieties of Plants) and adopted in December 1961 in Paris. UPOV is an intergovernmental organisation that seeks to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.

<sup>102</sup> s 2(2)(a) of the Plant Breeders' Rights Act.

other variety of the same kind of plant of which the existence on that date is a matter of common knowledge.<sup>103</sup> It is uniform if, subject to the variation that may be expected from the particular features of the propagation thereof, the characteristics of the variety are sufficiently uniform.<sup>104</sup> It is considered stable if the characteristics thereof remain unchanged after repeated propagation or at the end of a particular cycle of propagation.<sup>105</sup> The applicant applying for this right may be the breeder, the person's employer or successor in title of the person or employer. Furthermore, only a person who is a citizen of or is domiciled in South Africa, or a convention country, or a country with which South Africa has a bilateral agreement in place, may apply.<sup>106</sup> In South Africa, protection is extended only to a limited number of species and genera as prescribed in the Regulations of the Plant Breeder's Right Act. In areas such as biotechnology, crop protection, agronomic management practices, harvesting, etc, integrated agricultural innovations are critical to help address global challenges, such as climate change and demand for food crops.<sup>107</sup> The related research, including plant varietal improvements, is usually conducted by national agricultural research institutes in collaboration with international agricultural research centres.<sup>108</sup> A number of universities with faculties or departments with expertise in the agricultural sciences are therefore often approached or funded by both the public and private sectors to assist in the research and creation of these innovations. The involvement of the private sector helps to address the increasing funding challenges faced by public research institutions, but in return requires economic incentives provided by intellectual property rights.<sup>109</sup>

#### 4.4 Confidential information

Information that is not in the public domain and needs to be kept secret under the term "confidential information" is also considered a form of intellectual property.<sup>110</sup> This could include any documents, drawings, sketches, designs, formulae, materials, samples, prototypes, software, processes, data, and business methods, etc that at the time of their disclosure were identified as confidential.<sup>111</sup> In South Africa confidential information is protected by common law and is not regulated by statute. The evident way in which confidentiality is thus enforced is by way of a contract.

Confidential information must be secret to some extent and be communicated only in confidence to another party. In *Advtech Resourcing (Pty) Ltd t/a The Communicate Personnel Group v Kuhn*,<sup>112</sup> the court named three requirements that must be met in order for information to qualify as confidential: 1) it must involve and be capable of application in trade or industry – it must be useful; 2) it must not be public knowledge and public property – it must be known only to a restricted number of people or to a close circle; 3) the information must be of economic value to the person seeking to protect it.

<sup>103</sup> s 2(2)(b) of the Plant Breeders' Rights Act.

<sup>104</sup> s 2(2)(c) of the Plant Breeders' Rights Act.

<sup>105</sup> s 2(2)(d) of the Plant Breeders' Rights Act.

<sup>106</sup> Dean and Dyer *et al* (n 82) 285.

<sup>107</sup> Nhemachena, Liebenberg and Kirsten "The evolving landscape of plant breeders' rights regarding wheat varieties in South Africa" 2016 *South African Journal of Science* 1 8.

<sup>108</sup> Nhemachena, Liebenberg and Kirsten (n 107) 1.

<sup>109</sup> Nhemachena, Liebenberg and Kirsten (n 107) 1.

<sup>110</sup> Van Heerden and Neethling *Unlawful Competition* (2008) 214.

<sup>111</sup> as generally defined in a confidentiality agreement or non-disclosure agreement.

<sup>112</sup> 2007 4 All SA 1386 (C) par 51.

Further in *Strike Productions (Pty) Ltd v Bon View Trading 131 (Pty) Ltd* the court stated:

“The mere fact that a party chooses to call something secret does not per se make it so. In *Saltman Technicianing Co Ltd v Campbell Technicianing Co Ltd*, Lord Greene MR stated that, to be confidential, the information concerned must ‘have the necessary quality of confidence about it, namely it must not be something which is public property or public knowledge’.”<sup>113</sup>

The term “trade secrets” is also used in relation to confidential information, but is more closely associated with commercial and industrial activities. It is considered a species of confidential information.<sup>114</sup> It describes any information relating to trade, industry or business that has economic value and is non-public.<sup>115</sup> Trade secrets could manifest in the form of lists, formulas, techniques, recipes, technical processes, etc. A good example of a trade secret would be the complete formula of Coca-Cola and the measures that the Coca-Cola company has taken to protect the complete formula of Coca-Cola.<sup>116</sup> Likewise, the term “know-how” is also sometimes encountered in definitions of, or used in relation to, confidential information. It is used as a synonym for confidential information of a technological nature, especially the practical day-to-day working of complicated and definite processes.<sup>117</sup>

When a party collaborates with a university, confidential information is often shared between the parties. A confidentiality or non-disclosure agreement is usually signed to protect both the parties’ unpatented (but not necessarily patentable) ideas and inventions and other proprietary information. The main reasons for the sharing of confidential information are: (i) to obtain valuable input and advice from the other party, since they may hold expertise relating to the information, or (ii) for further research and development work to be done, or (iii) in order to finalise a concept invention, before a patent is filed.

#### 4.5 Other forms of intellectual property

Other forms of intellectual property such as trade marks,<sup>118</sup> designs,<sup>119</sup> other copyright-related intellectual property such as performances<sup>120</sup> and any other intellectual property rights not mentioned could surely be created at universities, but are ordinarily not the subject of intellectual property transactions between universities and their international research collaborators. It does however happen that some intellectual property created at universities is derived from traditional knowledge or indigenous biological resources,<sup>121</sup> which the South African government is seeking to protect as a new *sui generis* form of intellectual property. Various definitions are used to describe traditional knowledge, but it could in short be described as: “Knowledge, know-how, skills and practices that are developed,

<sup>113</sup> 2011 JDR 0022 (GSJ) par 23 (footnotes omitted).

<sup>114</sup> *Aranda Textile Mills (Pty) Ltd v Hurn* 2000 4 All SA 183 (E) par 29.

<sup>115</sup> Van Heerden and Neethling (n 110) 213.

<sup>116</sup> Soon and Bellow “The top 4 advantages of trade secret protection” *Inside Counsel* (18 Sept 2014) <http://www.insidecounsel.com/2014/09/18/the-top-4-advantages-of-trade-secret-protection> (11-10-2016).

<sup>117</sup> Knobel *The Right to the Trade Secret* (1996 thesis SA) 13.

<sup>118</sup> governed by the Trade Marks Act 194 of 1993.

<sup>119</sup> governed by the Designs Act 195 of 1993.

<sup>120</sup> governed by the Performers’ Protection Act 11 of 1967.

<sup>121</sup> See the definition of “indigenous biological resource” in s 1 of Act 10 of 2004.

sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity.”<sup>122</sup>

Statutory measures with the aim to grant a degree of protection to South Africa’s indigenous biological resources and related traditional knowledge are currently in force in the form of the National Environmental Management: Biodiversity Act 10 of 2004. Within this context, traditional knowledge refers to knowledge related to biodiversity, and biodiversity in turn is defined as a variety of living organisms and species.<sup>123</sup> Act 10 of 2004 does not categorise traditional knowledge or indigenous biological resources as *sui generis* forms of intellectual property, but one of its main aims is to ensure that when intellectual property rights are sought for an invention derived from bioprospecting<sup>124</sup> and involve indigenous biological resources, fair and equitable sharing of benefits among all stakeholders<sup>125</sup> will follow. The provisions of Act 10 of 2004 need to be adhered to not only where such bioprospecting occurs, but also where a patent is sought in South Africa<sup>126</sup> for an invention based on or derived from indigenous biological or genetic resources,<sup>127</sup> or traditional knowledge. Other legislation<sup>128</sup> aiming to recognise and protect traditional knowledge as a separate *sui generis* form of intellectual property has not yet been passed or implemented. When it is finally implemented, it will relate more to certain manifestations of traditional knowledge not commonly created at universities.

### 5 *International intellectual property transactions*

All indicated types of intellectual property and intellectual property rights commonly created at South African universities through research usually vest in the university. This occurs not only in terms of the intellectual property policy or other policies of the university (which usually include that intellectual property created by students as part of their studies will belong to the university, unless otherwise agreed between the university and the student),<sup>129</sup> but also in terms of

<sup>122</sup> [www.wipo.int/tk/en/tk](http://www.wipo.int/tk/en/tk) (10-11-2017).

<sup>123</sup> s 1 of Act 10 of 2004.

<sup>124</sup> S 1 of Act 10 of 2004 defines “bioprospecting” as “any research on, development or application of, indigenous biological resources for commercial or industrial exploitation ...” – own emphasis. The definition lists certain inclusions to provide clarity to the definition.

<sup>125</sup> S 1 of Act 10 of 2004 defines “stakeholder” as (a) a person, an organ of state or a community contemplated in s 82(1)(a); or (b) an indigenous community contemplated in s 82(1)(b).

<sup>126</sup> Also take note of the amendment to s 36(3)(A) and (B) of the Patents Act through the Patents Amendment Act 20 of 2005.

<sup>127</sup> S 1 of Act 10 of 2004 defines “genetic resource” as (a) any genetic material; or (b) the genetic potential, characteristics or information of any species.

<sup>128</sup> Protection, Promotion, Development and Management of Indigenous Knowledge Systems Bill (draft) GG 39910 (08-04-2016) and the Intellectual Property Laws Amendment Act 28 of 2013 (GG 37148 (10-12-2013)).

<sup>129</sup> See eg: Stellenbosch University Policy in respect of the Commercial Exploitation of Intellectual Property (01-12-2010) [http://www.innovus.co.za/media/documents/Innovus%20intellectual\\_property\\_policy.pdf](http://www.innovus.co.za/media/documents/Innovus%20intellectual_property_policy.pdf) (15-12-2017); University of Cape Town Intellectual Property Policy (27-07-2011) [https://www.uct.ac.za/downloads/uct.ac.za/about/policies/intellect\\_property.pdf](https://www.uct.ac.za/downloads/uct.ac.za/about/policies/intellect_property.pdf) (15-12-2017); University of Johannesburg Policy on Intellectual Property (22-11-2007) <https://www.uj.ac.za/research/Documents/policy/Policy%20on%20Intellectual%20Property.pdf> (15-12-2017) and University of Witwatersrand Intellectual Property Policy (25-09-2012) [http://libguides.wits.ac.za/ld.php?content\\_id=18737801](http://libguides.wits.ac.za/ld.php?content_id=18737801) (15-12-2017).



common-law principles,<sup>130</sup> decisions made by courts,<sup>131</sup> and various intellectual property legislation,<sup>132</sup> which state that a work made in the course and scope of a creator's employment shall belong to the employer. It is therefore assumed that intellectual property created by researchers and other persons employed by the university, during the course and scope of their employment, will belong to the university. Intellectual property creators may be entitled to share in the benefits or proceeds,<sup>133</sup> but the university is in the position to assign, license and commercialise the intellectual property it owns. This intellectual property could provide potential commercial benefit and competitive advantage to an industry partner and could also serve as tools of innovation for the public good. It is therefore understandable that funders and collaborators would want to acquire ownership of, or at least access to, the intellectual property emanating from the research they fund.

Generally, ownership of intellectual property is transferred from the owner to another party through assignment. Assignment of intellectual property must be in writing and usually be signed by the assignor.<sup>134</sup> In South Africa assignment even of copyright in a work that does not exist, but will come into existence in the future, is possible.<sup>135</sup> Licensing is the authorisation granted by the owner of the intellectual property to another party, to perform certain acts relating to the intellectual property, which will otherwise be unlawful. Generally, a licence agreement may be verbal or implied,<sup>136</sup> but for the good order and to avoid disputes, licensors and licensees prefer it to be in writing, clearly specifying the exact scope of the licence.<sup>137</sup>

In practice, international research collaboration is established through law of contract. A university and foreign entities will negotiate and agree on the terms governing the collaboration – the parties' obligations, the research to be conducted, the payment of funding, the intellectual property created, etc – through their legal representatives and then sign a contract to that effect. This contract will be steered by a legislative framework. Should a university contract itself out of compliance with the South African legislation regulating the intellectual property transactions, the agreement might be void,<sup>138</sup> among other possible consequences. The possible challenges, practicalities and effects of non-compliance are discussed below in more detail.

## 6 Legal framework

International research collaboration is typically established through a contract or an agreement. When a contract is concluded between a South African university and an international party or parties, it must draw its existence from a legal system, which

<sup>130</sup> Such as contract of employment.

<sup>131</sup> See *eg King v South African Weather Service* 2009 2 All SA 31 (SCA), where the court considered the meaning of "in the course of employment".

<sup>132</sup> See among others s 21(1)(d) of the Copyright Act; s 59(2) of the Patents Act; s 1(b) of the Plant Breeders' Rights Act; s 1(1) (definition of "proprietor") and s 29 of the Designs Act and s 4(1) of the Intellectual Property Rights From Publicly Financed Research and Development Act 51 of 2008.

<sup>133</sup> s 10 and 15(2)(c) read with reg 9 of the Intellectual Property Rights From Publicly Financed Research and Development Act 51 of 2008.

<sup>134</sup> See *eg* s 22(3) of the Copyright Act; s 60(1)(a) of the Patents Act and s 30(1)(a) of the Designs Act.

<sup>135</sup> s 22(5) of the Copyright Act.

<sup>136</sup> There are some exceptions to this general statement, such as s 22(3) of the Copyright Act.

<sup>137</sup> Dean and Dyer *et al* (n 82) 366.

<sup>138</sup> Hutchison, Pretorius and Du Plessis *The Law of Contract in South Africa* (2012) 181-182.

will specify the requirements for a contractual obligation to exist.<sup>139</sup> Several statutes make provision for the choice of contract law, but the relevant law determining the governing law remains common law.<sup>140</sup> As a rule of private international law, the choice of a legal system by parties to an international contract will generally be respected by the courts.<sup>141</sup> If the parties to the contract do not choose a governing law, the law to which the contract is most closely connected will apply.<sup>142</sup> In any case, the South African legislation discussed herein will have to be considered and adhered to by the contracting parties.

## 6.1 The Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008

On 2 August 2010 the Intellectual Property Rights from Publicly Financed Research and Development Act came into force. Its main objective is to regulate the identification, utilisation, protection and commercialisation of intellectual property resulting from publicly financed research and development<sup>143</sup> for the benefit of the people of South Africa.<sup>144</sup> The act further established the National Intellectual Property Management Office. The department of science and technology, through the National Intellectual Property Management Office, administers the act and is tasked to ensure compliance therewith. This links to department of science and technology's Ten Year Innovation Plan aimed at stimulating the rise of a knowledge-based economy through innovation.<sup>145</sup> It places obligations on recipients of public funds<sup>146</sup> to manage and commercialise the intellectual property created through use of such funds.<sup>147</sup> Since universities are institutions<sup>148</sup> receiving state subsidy to *inter alia* operate and pay the salaries of researchers, they are categorised as recipients.<sup>149</sup> Even if the state funding is not explicitly earmarked for research and experimental development or only partially covers research and experimental development activities, it is assumed that the legislator intended that such research and experimental development would be publicly financed.<sup>150</sup> When the research and experimental development undertaken at an institution are funded at full cost by

<sup>139</sup> Forsyth *Private International Law* (2003) 294.

<sup>140</sup> Forsyth (n 139) 294.

<sup>141</sup> Forsyth (n 139) 303.

<sup>142</sup> Forsyth (n 139) 295.

<sup>143</sup> S 1 of the act defines "publicly financed research and development" as meaning research and development undertaken using any funds allocated by a funding agency, but excludes funds allocated for scholarships and bursaries, and "funding agency" as meaning the state or an organ of state or a state agency that funds research and development.

<sup>144</sup> s 2 of the act.

<sup>145</sup> Chetty "Review of intellectual property rights act and regulations: Intellectual Property Rights from Publicly Financed Research and Development Act, Act No 51 of 2008, Republic of South Africa" 2009/2010 *African Journal of Information and Communication* 78.

<sup>146</sup> There are no definitions for "public funds" or "publicly financed" in s 1 of the act, but the definitions for "publicly financed research and development" and "funding agency" indicate that the act refers to state funding. The words "any funds" are assumed to cover partial funding.

<sup>147</sup> s 2 read with s 5 of the act.

<sup>148</sup> S 1 defines "institution" in subsection (a) as meaning any higher education institution contemplated in the definition of "higher education institution" contained in s 1 of the Higher Education Act 101 of 1997.

<sup>149</sup> S 1 defines "recipient" as meaning any person, juristic or non-juristic, that undertakes research and development using funding from a funding agency and includes an institution. The terms "recipient" and "university" is therefore used interchangeably.

<sup>150</sup> Du Plessis *et al* (eds) *Adams and Adams Practical Guide to Intellectual Property in Africa* (2012) 402.

a party wishing to obtain any intellectual property rights, the Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008 will not apply.<sup>151</sup> Full cost is determined in accordance with international financial reporting standards and includes all direct and indirect cost of undertaking the research and experimental development.<sup>152</sup>

The Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008 applies to intellectual property emanating from publicly financed research and development.<sup>153</sup> It includes all forms of intellectual property, as “intellectual property” is very widely defined as: “any creation of the mind that is capable of being protected by law from use by any other person, whether in terms of South African law or foreign intellectual property law, and includes any rights in such creation ...”<sup>154</sup>

It excludes only academic copyrighted works such as a thesis, dissertation, article, handbook or other publication, which is associated with the ordinary course of business. This means that “intellectual property”, in this context, is not limited to patentable inventions only, but includes all forms of intellectual property, *ie* the forms as discussed above. This could include any results, outcomes, data and other information derived from research and experimental development activities.<sup>155</sup> It would also include subject matter protectable under foreign intellectual property law.

Recipients are also obliged to protect, manage, commercialise and report on the intellectual property that is created using the public funds.<sup>156</sup> Section 5(1)(g) specifically obliges the recipient to negotiate and enter into intellectual property transactions<sup>157</sup> with third parties.<sup>158</sup> These obligations and listed considerations<sup>159</sup> are all aimed at optimising benefits for South Africa. In turn, the National Intellectual Property Management Office must develop guidelines for intellectual property transactions and manage the implementation of such guidelines.<sup>160</sup> Prior to Act 51 of 2008, universities had the freedom to contractually deal with the intellectual property they would potentially create, as they saw fit. Since the act came into operation, it dictates the following positions regarding all intellectual property emanating from publicly financed research and development.

<sup>151</sup> s 15(4)(a) of the Intellectual Property Rights from Publicly Financed Research and Development Act.

<sup>152</sup> s 15(4)(b) read with reg 16 of the act.

<sup>153</sup> s 3(1) of the act.

<sup>154</sup> s 1 of the act.

<sup>155</sup> Du Plessis *et al* (eds) (n 150) 401.

<sup>156</sup> s 5 of the act; Biagio “The Intellectual Property Rights from Publicly Financed Research and Development Act has come into force” *Spoor and Fisher* (18 Aug 2010) <http://www.spoor.com/en/News/the-ipr-pfrd-act-has-come-into-force/> (15-12-2017).

<sup>157</sup> S 1 of the act defines “intellectual property transaction” as any agreement in respect of intellectual property emanating from publicly financed research and development, including licensing, assignment and any arrangement in which the intellectual property rights governed by the act are transferred to a third party.

<sup>158</sup> See s 15(5) of the act. It is assumed that references to “foreign entity”, “funder” and “collaborator” qualify to fall within this category of “private entity or organisation”.

<sup>159</sup> s 11 of the act.

<sup>160</sup> s 9(4)(e) of the act.

### 6.1.1 Ownership of intellectual property

Ownership of intellectual property shall in the first instance belong to the recipient.<sup>161</sup> If a recipient chooses not to retain ownership or seek protection for the intellectual property it created (eg wanting to place it in the public domain), the National Intellectual Property Management Office may acquire the intellectual property.<sup>162</sup> If the National Intellectual Property Management Office chooses not to acquire the intellectual property, then an international funder, that partially funded the research and experimental development, will be given an option to acquire ownership of the intellectual property from the recipient.<sup>163</sup> If the funder exercises this option to obtain ownership, the option will be subject to a benefit-sharing right granted to the creator of the intellectual property.<sup>164</sup> Since the funder did not pay the full cost in this case and then acquired ownership of the intellectual property emanating from publicly financed research and experimental development, it is obliged to share the benefits (at least 20 to 30 percent of the revenue) of the commercialisation of such intellectual property with the intellectual property creator at a university.<sup>165</sup> The act does not clarify how the percentage mentioned will flow to the intellectual property creator, as section 10 refers to revenue accruing to the university only.<sup>166</sup> Perhaps the intention of the act was that the funder, after exercising the option contemplated in section 4(4), needs to negotiate a purchase price for the intellectual property, or some royalty-type agreement with the university, after which the university then needs to distribute the said percentage to the intellectual property creator. Another observation is that “revenue” is defined as including non-monetary benefits.<sup>167</sup> This leaves one asking: how will section 10(2) be applied where the benefits are indeed non-monetary?

Case in point: should the university at the negotiation stage of an agreement decide not to retain ownership of any intellectual property it may create, and the funder who provided partial funding wishes to obtain full ownership of such intellectual property, the university is obliged to first offer the intellectual property to the National Intellectual Property Management Office. If the National Intellectual Property Management Office declines, only then may the university proceed to assign the intellectual property to the funder. Should the intellectual property not generate an income or royalties, how is the intellectual property creator supposed to receive the 20 to 30 percent benefit?

### 6.1.2 Co-ownership of intellectual property

Foreign funders and collaborators may co-own intellectual property created through research and experimental development undertaken at a university only if all four of the following conditions are met:

- “(a) there has been a contribution of resources, which may include relevant background intellectual property by the private entity or organisation;
- (b) there is *joint* intellectual property *creatorship*;

<sup>161</sup> s 4(1) of the act.

<sup>162</sup> s 4(2) and (3) of the act.

<sup>163</sup> s 4(4) of the act.

<sup>164</sup> s 4(4)(b) read with s 10 of the act.

<sup>165</sup> s 10(2) of the act.

<sup>166</sup> s 10(1) of the act.

<sup>167</sup> s 1 of the act.

- (c) appropriate arrangements are made for benefit-sharing for intellectual property creators at the institution; and
- (d) the institution and the private entity or organisation conclude an agreement for the *commercialisation*<sup>168</sup> of the intellectual property.”<sup>169</sup>

The effect of section 15(2) is firstly that an international funder or collaborator may not co-own any of the intellectual property created if it did not co-create the intellectual property, even if it contributed resources or in-kind contributions. For example, a collaborator may provide almost all the funding and background intellectual property to create data, but then not share in ownership thereof. Secondly, co-ownership will not vest in the parties who agreed to co-own, unless an agreement for the commercialisation of the intellectual property is concluded, even if it is not sure whether commercialisable intellectual property will be created. It seems as if the act was drafted without pre-empting the fact that research collaboration agreements and intellectual property clauses are often negotiated before any intellectual property will be, or is sure to be, created.

### 6.1.3 Offshore transactions

A university must advise the National Intellectual Property Management Office of its intention to conclude an intellectual property transaction offshore and this may occur only in accordance with the prescribed regulations and guidelines.<sup>170</sup> If it does not comply with the regulations and guidelines, the transaction requires prior approval from the National Intellectual Property Management Office.<sup>171</sup> Should a university wish to assign intellectual property or grant an *exclusive licence* offshore, it must satisfy the National Intellectual Property Management Office that: “(a) there is insufficient capacity in the Republic to develop or commercialise the intellectual property locally; and (b) the Republic will benefit from such offshore transaction.”<sup>172</sup>

Before the granting of an exclusive licence, the university must ensure that the offshore entity is capable of developing the intellectual property further and undertaking the commercialisation thereof.<sup>173</sup> An exclusive licence holder must in particular provide access to the benefits to South Africa, on reasonable terms.<sup>174</sup> A *non-exclusive* licence to an offshore entity may be granted on an arm’s-length basis.<sup>175</sup> National Intellectual Property Management Office approval must be obtained if the transaction is not at arm’s-length or if it is on a royalty-free basis.<sup>176</sup> *Non-commercial* licences for research, development and educational purposes may be granted at any time without National Intellectual Property Management Office approval.<sup>177</sup> Section 11(1) states that the nature and conditions of intellectual property transactions relating to the intellectual property a university owns will

<sup>168</sup> S 1 of the act defines “commercialisation” as: “the process by which any intellectual property emanating from publicly financed research and development is or may be adapted or used for *any* purpose that may provide *any* benefit to society or commercial use on reasonable terms, and ‘commercialise’ have a corresponding meaning”; read with reg 1 of the Intellectual Property Rights from Publicly Financed Research and Development Act – emphasis added.

<sup>169</sup> s 15(2) of the act – emphasis added.

<sup>170</sup> s 12(1)(a) and (b) of the act.

<sup>171</sup> s 12(1)(c) of the act.

<sup>172</sup> s 12(2) read with reg 12(7) of the act – own emphasis.

<sup>173</sup> reg 12(5) of the act.

<sup>174</sup> reg 12(6) of the act.

<sup>175</sup> reg 12(1) and (2) of the act.

<sup>176</sup> reg 12(3) of the act.

<sup>177</sup> reg 10 of the act.

be determined by the university. It then lists certain considerations the university is obliged to take into account. In addition, regulation 12(4) further specifically provides for state “walk-in” rights and determines that each intellectual property transaction must include the following statement:

“The intellectual property under this transaction was created with support from the South African Government (under the contract number applicable) awarded by (identify the Funding Agency or relevant government department where applicable) and is subject to the requirements of the South African Intellectual Property from Publicly Financed Research and Development Act, 2008 and its regulations (Act 51 of 2008). The South African government has certain rights to the intellectual property in terms of sections 11(1)(e), 11(2) and 14 of Act 51 of 2008.”<sup>178</sup>

Where the intellectual property is co-owned and the foreign co-owner provided funding using public finance from its country, it is not clear how and if this will have an effect. If the funders’ government also demands walk-in rights, it is uncertain how the parties should deal with this in the collaboration agreement.

#### 6.1.4 Commercialisation

The act contains various provisions concerning commercialisation. It places the obligation to commercialise intellectual property mostly on the recipient, but also affects the foreign entity. Each intellectual property transaction the recipient enters into must set out the condition that the state may exercise its rights to demand the granting of a royalty-free licence or assignment, if a party fails to commercialise the intellectual property to the benefit of South Africa.<sup>179</sup> One would expect these provisions to have no impact where a funder or collaborator has acquired full ownership of the intellectual property in terms of section 4(4),<sup>180</sup> but this is not clarified. With specific reference to a collaborative research and experimental development agreement involving an international funder or organisation, regulation 15(4)(d) states:

“where the collaborative agreement requires that intellectual property emanating from the collaborative research and development be made available to the collaborators or other parties for commercialisation on the royalty-free basis, or should not be commercialised, the recipient must refer in Form IP8 such agreement to NIPMO for approval, *prior to commencement* of work under such agreement” – emphasis added.

The regulation does not state the position should the said agreement be silent on commercialisation. It also does not state the position should the parties agree to commercialise the intellectual property as per the definition of “commercialisation”,<sup>181</sup> eg through publication of the results or making data available to the public domain. In the case where co-ownership is established after the requirements in section 15(2) are met, an onus also rests on the co-owning funder or collaborator to commercialise the intellectual property.<sup>182</sup> If the intellectual property is not commercialised, the state through the National Intellectual Property Management Office may claim assignment.<sup>183</sup>

<sup>178</sup> read with regs 14(2) and 14(3) of the act.

<sup>179</sup> s 11 read with s 14 of the act.

<sup>180</sup> Du Plessis *et al* (eds) (n 150) 409.

<sup>181</sup> (n 168).

<sup>182</sup> s 15(3) read with regs 11(5) and 15(4)(b) of the act.

<sup>183</sup> s 15(3) read with s 14 of the act.



### 6.1.5 Impact

The act evidently has certain implications for any agreement concerning intellectual property between universities and their international funders and collaborators.<sup>184</sup> It is therefore essential to take the provisions of this act into account when negotiating and structuring such an agreement.<sup>185</sup> Should a university wish to avoid the implications of the act, it means the prior submission and approval of a full cost budget for each and every research project where intellectual property might be created. Alternatively, approval may be obtained on a case-by-case basis through the drafting, completion and submission of the prescribed forms to the National Intellectual Property Management Office.

The act was a response to recommendations made after a study found that publicly financed research was underutilised.<sup>186</sup> One recommendation focused on innovation and commercialisation mechanisms, but the general focus was actually on incentivising research through support measures, such as encouraging of the formation of research networks and promoting university-industry research links.<sup>187</sup> It seems as if only the innovation and commercialisation aspect was addressed. The act may have had the best intentions to increase university-based patent applications and aid the growth of South Africa technology, but unfortunately the impact and consequences of the act relating to intellectual property transactions that are entered into before research and experimental development activities commence and where the outcome of the research is uncertain were not foreseen. Furthermore, it seems that the legislator mainly had patentable inventions in mind, without contemplating the consequences the act will have for other forms of intellectual property created at universities. Moreover, some of the provisions have the potential to be counter-productive:

- i There is no definition of “research and development” in the act. In the absence of such a definition, the concept “research and development” includes basic research. Universities often conduct basic research that is not intended to have actual or potential commercial or industrial value, or such is not sufficiently clear or known at the proposal writing or agreement-negotiation stage. Furthermore, the results of basic research are usually intended for publication in scientific journals or for release into the public domain, for the public good. Compared to applied research and experimental development, which are intended for application and commercialisation in the traditional sense, basic research seeks the advancement of a broad base of knowledge. The fact that there are no exceptions for basic or non-commercial research in the act could restrict the academic freedom of universities.
- ii Funders and collaborators usually require research results from research and experimental development activities to be delivered through research reports. The results typically contain information protectable by copyright only. Since the definition of “intellectual property”<sup>188</sup> in Act 51 of 2008 is so wide, it automatically includes these reports as intellectual property emanating from research and experimental development at universities. Secondly, the inclusion of foreign intellectual property law in this definition means that universities

<sup>184</sup> Dean and Dyer *et al* (n 82) 389.

<sup>185</sup> Du Plessis *et al* (eds) (n 150) 410.

<sup>186</sup> Chetty (n 145) 78.

<sup>187</sup> Chetty (n 145) 79.

<sup>188</sup> s 1 of the Intellectual Property Rights from Publicly Financed Research and Development Act.

are required to obtain international protection, even where the research and experimental development do not qualify for intellectual property protection in South Africa.<sup>189</sup> This places a heavy burden on universities, as it may not always be desirable or practical for universities to obtain protection and manage the intellectual property they own, in foreign countries. International protection can also be costly and lengthy.<sup>190</sup>

- iii A funder may contribute background intellectual property, equipment, bursaries, access to its facilities and other non-monetary contributions to the research in addition to funding. The act does not address in-kind contributions, even if the value could be projected to be equal to full cost.
- iv Generally, commercialisation of intellectual property occurs when the value of the intellectual property is realised in the marketplace through a vehicle that results in financial return.<sup>191</sup> The current definition of over-broad “commercialisation” causes a problematic conflation of commercialisation and socialisation of knowledge.<sup>192</sup> The act does not recognise the differing trajectories in research that could be commercialised through intellectual property protection on the one side, and research which is socialised through sharing, on the other.<sup>193</sup>
- v Open access to knowledge and research results is also not addressed in the act, with the exception of section 2(2)(f) and its accompanying regulations, which state that a university may place the research output in the public domain, however, prior approval from the National Intellectual Property Management Office must be obtained.<sup>194</sup> This places an undue burden on the researchers to make a case for placing their work in the public domain, a prerogative previously enjoyed by universities without complexities.<sup>195</sup> This point is important for the social sciences and health sciences, where research is often by definition research for the greater good of society.<sup>196</sup>

## 6.2 Recommendations

In light of these issues and to ease the burden of compliance on universities and their funders or collaborators, the following recommendations (corresponding with the points above) are made:

- i An appropriate definition of “research and development”, accompanied by exceptions for basic research and research with no commercial (but academic or social-economic) intent, is required. It is suggested that the definition provided by the *Frascati Manual* be considered, but with a clear differentiation between “basic research”, on the one hand, and “applied research” and “experimental development”, on the other hand. The authors are of the view that Act 51 of 2008 should not apply to “basic research”, or at least address it separately –

<sup>189</sup> Ncube, Abrahams and Akinsanmi “Effects of the South African intellectual property regime on generating value from publicly funded research: an exploratory study of two universities” in De Beer, Armstrong, Oguamanam and Schonwetter *Innovation and Intellectual Property – Collaborative Dynamics in Africa* (2014) 282 292.

<sup>190</sup> Ncube, Abrahams and Akinsanmi (n 189) 292.

<sup>191</sup> Ncube, Abrahams and Akinsanmi (n 189) 285.

<sup>192</sup> Ncube, Abrahams and Akinsanmi (n 189) 290.

<sup>193</sup> Ncube, Abrahams and Akinsanmi (n 189) 291.

<sup>194</sup> reg 2(4) to 2(8) of the act.

<sup>195</sup> Chetty (n 145) 80.

<sup>196</sup> Chetty (n 145) 80.

- allowing for and recognising the non-commercial benefits which may flow from it.
- ii The definition of “intellectual property”<sup>197</sup> should be amended, for example by adding a section 1(b) to then read as follows – words to be deleted between [ ]:  
 “‘intellectual property’ means any creation of the mind that is capable of being protected by law from use by any other person, [whether in terms of South African law or foreign intellectual property law,] and includes any rights in such creation, but excludes copyrighted works such as:  
 (a) a thesis, dissertation, article, handbook or any other publication which, in the ordinary course of business, is associated with conventional academic work; and  
 (b) a research report which is produced as a result of basic research conducted.”
  - iii A definition for “funding” and an amendment of the definition for “full cost”, to both include or make provision for non-monetary contributions.
  - iv The definition of “commercialisation”<sup>198</sup> should be amended to read, for example:  
 “‘commercialisation’ means the process by which any intellectual property emanating from publicly financed research and development is or may be adapted or used for any purpose that results in [and may provide any benefit to society or] commercial use on reasonable terms, and ‘commercialise’ shall have a corresponding meaning”.
  - v The choice to not commercialise or protect intellectual property, due to academic or social development aims, should remain within the autonomy of a university. Leaving it up to government officials to make decisions across such a wide range of knowledge domains regrettably creates a bureaucratic chasm.

### 6.3 Study conducted

According to a study done at the University of Cape Town and the University of the Witwatersrand, the implementation of the act poses practical challenges.<sup>199</sup> Both intellectual property administrators and researcher-inventors affected were interviewed.

At the University of Cape Town interviewees stated that although the intent of the act is appreciated, it is not ideal for the commercialisation of intellectual property to be mandated by legislation. Some research lends itself more readily to commercialisation than other research and the act does not bear these distinctions in mind.<sup>200</sup> A small but significant loss of industry-contracted research was pointed out.<sup>201</sup> An interviewee stated that barriers arise from the need to seek the National Intellectual Property Management Office’s approvals, because it lengthens research contract negotiations, making the process more expensive and less attractive.<sup>202</sup> Where difficulties arose, the University of Cape Town negotiated the situations by obtaining the necessary approvals from collaborating partners, but this caused delays in concluding agreements.<sup>203</sup> It was stated that the National Intellectual Property Management Office compliance is onerous, and provision of funding by the National Intellectual Property Management Office is critical for human

<sup>197</sup> s 1 of the act.

<sup>198</sup> (n 168).

<sup>199</sup> Ncube, Abrahams and Akinsanmi (n 189) 297.

<sup>200</sup> Ncube, Abrahams and Akinsanmi (n 189) 297.

<sup>201</sup> Ncube, Abrahams and Akinsanmi (n 189) 297.

<sup>202</sup> Ncube, Abrahams and Akinsanmi (n 189) 298.

<sup>203</sup> Ncube, Abrahams and Akinsanmi (n 189) 299.

resources, skills transfer to the research community and funding for the development and commercialisation of early-stage intellectual property.<sup>204</sup> The researchers interviewed favoured dissemination of their research findings and participation in international research consortia. One interviewee stated that researchers' main mode of knowledge dissemination is through publishing, and that the act must seek to minimise any negative impact on publishing. Another researcher was concerned that when a project has multiple funders or stakeholders, consensus on matters of intellectual property ownership will be difficult to achieve. The interviewees viewed it as critical that resources are not wasted, and that research is suitably directed to accrue the appropriate benefits.<sup>205</sup>

At the University of the Witwatersrand the intellectual property administrators confirmed that many funders have had to re-evaluate their approach since the introduction of the act.<sup>206</sup> Before, the partially funded research projects were additionally funded by government or other university funding, and belonged to the University of the Witwatersrand in terms of its intellectual property policy. The University of the Witwatersrand would then negotiate the funders' rights from this starting point.<sup>207</sup> At the University of the Witwatersrand the full-costing for industry was not so much of a problem, but the intellectual property administrators wanted to understand the risks and liabilities more explicitly.<sup>208</sup> The view was expressed that the act has opened up the conversation about commercialisation and innovation, but emphasised that intellectual property protection must be linked to the ability to exploit the intellectual property in the market.<sup>209</sup> The researchers interviewed at the University of the Witwatersrand also prioritised publishing and pointed out the potential conflict between publishing and exploitation. They also felt limited by the difficulties in commercialising early-stage research.<sup>210</sup>

The study found that there is a sense of ambiguity and uncertainty regarding the act and its practical implications, warranting the feeling that it needs redrafting. It is noteworthy that none of the amendments proposed by universities and lawyers prior to enactment was adopted.<sup>211</sup> In an effort to clarify areas of uncertainty, the National Intellectual Property Management Office has published guidelines and interpretation notes.<sup>212</sup> The primary issue, however, remains the matter of what exactly falls within the scope of the act, since research and experimental development have not been defined.<sup>213</sup> The findings concluded that the act is in essence a patent act, not a comprehensive piece of legislation for publicly financed innovation.<sup>214</sup> The initiative to promote and regulate patents at universities is prompting behaviour, but in turn global trends in publishing raise questions as to how to maximise the value of research output through academic publications.<sup>215</sup> The act's focus on patenting and lack of focus on social value may be perceived as a weakness. This is because the research landscape at universities consists of knowledge production,

<sup>204</sup> Ncube, Abrahams and Akinsanmi (n 189) 297-298.

<sup>205</sup> Ncube, Abrahams and Akinsanmi (n 189) 299.

<sup>206</sup> Ncube, Abrahams and Akinsanmi (n 189) 302.

<sup>207</sup> Ncube, Abrahams and Akinsanmi (n 189) 302.

<sup>208</sup> Ncube, Abrahams and Akinsanmi (n 189) 303.

<sup>209</sup> Ncube, Abrahams and Akinsanmi (n 189) 304.

<sup>210</sup> Ncube, Abrahams and Akinsanmi (n 189) 305.

<sup>211</sup> Ncube, Abrahams and Akinsanmi (n 189) 307.

<sup>212</sup> Ncube, Abrahams and Akinsanmi (n 189) 307.

<sup>213</sup> Ncube, Abrahams and Akinsanmi (n 189) 307.

<sup>214</sup> Ncube, Abrahams and Akinsanmi (n 189) 308.

<sup>215</sup> Ncube, Abrahams and Akinsanmi (n 189) 308.

dissemination, socialisation of knowledge and commercialisation – all of which are related endeavours.<sup>216</sup> Treating them as related processes will address all the elements of knowledge production in the intellectual property ecosystem.<sup>217</sup> Finally, the view is expressed that the act conceptualises commercialisation so broadly that an inevitable commercialisation imperative applies to knowledge, which should rather be prioritised for socialisation. The socialisation of knowledge has one major imperative – sharing. Sharing allows for the adapting and adopting of the knowledge by various sections of society and forms the foundation of knowledge-building for future generations.<sup>218</sup> Even if the act did envisage a broad societal and economic impact through this legal-regulatory system, it is essential to distinguish two main kinds of impact: commercial and social.<sup>219</sup> This is where the act falls short. Above all, a university is a social institution of knowledge generation, not merely a narrow economic and commercial instrument in the hands of government.<sup>220</sup>

#### 6.4 The Currency and Exchanges Act 9 of 1933 and the Exchange Control Regulations of 1961

The South African Reserve Bank controls the import and export of capital in South Africa on behalf of treasury.<sup>221</sup> The Currency and Exchanges Act and Excon Regulations<sup>222</sup> enable it to do so. The Excon Regulations, more specifically regulation 10(1)(c), prohibit any transaction whereby capital or any right to capital is directly or indirectly exported from South Africa to a non-resident, without first obtaining approval from treasury.<sup>223</sup> Regulation 10(1)(c) and its interpretation relating to intellectual property rights received attention for the first time in *Couve v Reddot International (Pty) Ltd*.<sup>224</sup> In this case the court found that an assignment agreement relating to the assignment of rights in and to certain South African patent applications to a foreign company was null and void from the outset, due to the non-obtaining of prior treasury approval. The court was of the opinion that “capital” is anything which has monetary value and that the assignment constituted an indirect or partial “export” of these rights.

The application of regulation 10(1)(c) was then again considered by the high court in *Oil Well (Pty) Limited v Protec International Limited*.<sup>225</sup> Here the applicant sought the assignment of a South African trade mark to a foreign party to be declared null and void and relied on the interpretation of regulation 10(1)(c) in the *Couve* case. The high court found, contrary to the *Couve* case, that intellectual property rights are not “capital” within the meaning of the Excon Regulations. The supreme court of appeal confirmed this in *Oil Well (Pty) Ltd v Protec International Ltd*<sup>226</sup> and found that the term “capital” should be interpreted as meaning “cash for investment, money

<sup>216</sup> Ncube, Abrahams and Akinsanmi (n 189) 309.

<sup>217</sup> Ncube, Abrahams and Akinsanmi (n 189) 310.

<sup>218</sup> Ncube, Abrahams and Akinsanmi (n 189) 286, 310.

<sup>219</sup> Ncube, Abrahams and Akinsanmi (n 189) 310.

<sup>220</sup> Ncube, Abrahams and Akinsanmi (n 189) 310.

<sup>221</sup> Dean and Dyer *et al* (n 82) 385.

<sup>222</sup> (n 2).

<sup>223</sup> According to the definition in s 1 of the Excon Regulations, “Treasury”, in relation to any matter contemplated in these regulations, means the minister of finance or an officer in the department of finance who, by virtue of the division of work in that department, deals with the matter on the authority of the minister of finance.

<sup>224</sup> 2004 6 SA 425 (W).

<sup>225</sup> (44835/08) 2010 ZAGPPHC 7 (17 Feb 2010).

<sup>226</sup> 2011 4 SA 394 (SCA).

that can produce further wealth”. Harms J pointed out that the Excon Regulations intended to regulate and control foreign currency. He also compared intellectual property rights to immovable property that cannot be exported. The supreme court of appeal then held that regulation 10(1)(c) does not apply to assignments of South Africa trade marks to foreign parties and concluded that this principle should apply as well to other forms of intellectual property, such as patents, designs and copyright. The assignment agreement was found not to be invalid.

Notwithstanding the judgment made in the *Oil Well* case, an amendment<sup>227</sup> to the Excon Regulations followed on 8 June 2012. Regulation 10 was amended by the insertion of sub-regulation (4). This amendment causes the definition of “capital” to include any intellectual property rights. It further defines “export from the Republic” as including the cession, assignment, transfer or waiver of any intellectual property rights. The amendment does not define “intellectual property rights”, but it includes registered and unregistered intellectual property rights, which casts the net really far and wide, especially since the derivatives of the word “include” in the regulation may even suggest that the granting of a licence constitutes the exporting of an intellectual property right.<sup>228</sup> This means that any resident of South Africa wanting to enter into an intellectual property transaction with a foreign entity must obtain prior exchange control approval from the South African Reserve Bank. The amendment to the regulation does not, however, detract from the finding in the judgment that the failure to obtain prior Treasury approval does not invalidate the agreement in question.

Firstly, the meaning of the terms “capital” and “export” relating to intellectual property has been and still is the subject of much debate.<sup>229</sup> However, the main challenge faced by universities is to determine what exactly is meant by “intellectual property rights” within the context of regulation 10. Although it is certain that registered intellectual property rights, such as patents, designs, trade marks, and plant breeders’ rights fall within the ambit of the Excon Regulations, a question mark remains when it comes to unregistered intellectual property rights.<sup>230</sup> The assumption is that copyright works are included, but what about other intangibles which are often viewed as intellectual property, such as trade secrets, confidential information, know-how, business methods, etc? Also, the written guidelines circulated by the South African Reserve Bank on the interpretation of the Excon Regulations stipulate that the “waiver of rights in favour of non-residents in whatever form, directly or indirectly, is not allowed without the prior approval of the Financial Surveillance Department”. This could be interpreted to mean a waiver to a right in the form of a licence.<sup>231</sup>

Secondly, since it is trite law that an intellectual property right is territorial, it can never be exported. The supreme court of appeal in the *Oil Well* case specifically held that intellectual property rights are territorial and akin to immovable property and cannot be exported. Notwithstanding this judgment, it appears that the legislator is of the view that, although the intellectual property (the capital asset) remains in South Africa, an assignment or licence in respect of it to a foreign party would in effect mean that no value or benefit would thereafter accrue to South Africa,

<sup>227</sup> GN R 445 in *GG* 35430 (08-06-2012).

<sup>228</sup> Harms (n 76) 424.

<sup>229</sup> Dean and Dyer *et al* (n 82) 386.

<sup>230</sup> Bull, Van Harmelen and Steyn *Exchange Control and Clinical Trials Agreements* [http://www.rcips.uct.ac.za/sites/default/files/image\\_tool/images/100/ENS\\_IS.pdf](http://www.rcips.uct.ac.za/sites/default/files/image_tool/images/100/ENS_IS.pdf) (15-12-2017).

<sup>231</sup> Dean and Dyer *et al* (n 82) 388.



which would amount to indirect export of capital.<sup>232</sup> It should also be asked what the position is where a transfer of intellectual property rights arguably occurs by way of a contract signed before registration of such intellectual property rights. For example, a university enters into a research agreement whereby all inventions and intellectual property rights relating thereto will be assigned to the foreign funder in the event of any intellectual property being created (as the outcome of the research is not sure). The researcher (employee of the university) then conducts the research work and a patentable invention is the outcome. The invention is treated as confidential information and assigned to the foreign funder in terms of the contract. The foreign funder then proceeds to patent this invention only in its own country. Did this invention constitute an unregistered intellectual property right? If so, was it exported? As mentioned in chapter 1, the “right” to an invention or novel work is merely an expectation, which could crystallise into an intellectual property right.<sup>233</sup> Where the invention or creative work has not yet crystallised into an intellectual property right at the time of the signing of the agreement, the position is unclear. It could possibly be argued that a South African intellectual property right to assign or export never existed.

#### 6.4.1 Impact

The agreements which universities must sign when receiving funding or payment for research sometimes require the assignment of intellectual property rights, and often the granting of a licence to use the intellectual property created by the university. Industry partners providing funding often insist on rights to the intellectual property emanating from research projects, and non-profit funding entities are also increasingly demanding more stringent intellectual property provisions (although for different reasons, such as ensuring their freedom-to-operate or dissemination of the results).<sup>234</sup> In the face of the uncertainty regarding the scope of “any intellectual property right” in regulation 10(4), the safe approach followed by universities is to submit a formal application for treasury approval to the South African Reserve Bank, for each and every transaction wherein a South African university may transfer any intellectual property rights to or in favour of a non-resident. The preparation and submission of the applications are costly, time-consuming and require human capacity, which universities often cannot afford. Most importantly, these bureaucratic measures obstruct the flow of much-desired international collaborations and transactions providing research funding at universities. For example, the collaborator or funder needs to be informed of the South African law and compelled to negotiate or amend the contract to include a clause, such as:

“This agreement shall only come into full force and effect, where applicable, once the necessary regulatory approvals, including but not limited to NIPMO and South African Reserve Bank approval, have been obtained. In the event that regulatory approval is not attained, this agreement shall be of no further force or effect and both Parties will be relieved of all rights and obligations hereunder.”

Another effect regulations 10(1)(c) and 10(4) had on universities was that the South African Reserve Bank approval had to be obtained in every instance where the copyright in a work to be published was transferred to a foreign publisher (to be

<sup>232</sup> Du Plessis *et al* (eds) (n 150) 381.

<sup>233</sup> Du Plessis *et al* (eds) (n 150) 423.

<sup>234</sup> Wolson (n 66) 1655.

published in a scientific journal). The National Intellectual Property Management Office made a request for an exemption to the South African Reserve Bank. This led to the publication of the amended Currency and Exchanges Manual for Authorised Dealers, published on 29 July 2016.<sup>235</sup> Fortunately, an exemption from regulation 10(1)(c) granted only to institutions was made.<sup>236</sup> It states:

“Such institutions may transfer copyrighted material to an international publishing house when publishing an article in an international journal and/or transfer material in terms of a material transfer agreement, provided the value of the transaction does not exceed R50 000. Authorised Dealers must refer transactions in excess of the stipulated amount to the Financial Surveillance Department.”

The purpose of the Excon Regulations may be to protect South African currency by preserving and controlling capital reserves<sup>237</sup> and to keep intellectual property for the benefit of South Africa, but the effect of the amendment of regulation 10 remains a cause of onerous and undue formalities.<sup>238</sup>

#### 6.4.2 Recommendation

The authors agree with the criticism of Harms J that the idea that intellectual property rights can be exported is based on a mistaken understanding of the nature of intellectual property.<sup>239</sup> Once it has crystallised into intellectual property rights, it does not exist outside the borders of South Africa. The legislator failed to take this nature and scope of intellectual property rights into consideration,<sup>240</sup> and that the transfer of ownership of intellectual property rights allows for only a change in the ownership title. A new (foreign) owner will subsequently, by law, be able to exercise the rights only in South Africa. In light hereof, it is recommended that regulation 10(4) be deleted and a more accurate and appropriate definition of “capital” be provided.

### 7 *Challenges and potential effects of compliance*

The legislation discussed is all fairly new, and some affected universities are still setting up the necessary processes and trying to smooth out difficulties, in order to comply. The courts have not yet had an opportunity to consider, interpret and apply the provisions of the Intellectual Property Rights from Publicly Financed Research and Development Act and its regulations. The Excon Regulations have also not been tested again after the amendment of regulation 10. Until such time, or until further amendments have been made to the legislation, the onus rests on universities to comply, or face the consequences.

<sup>235</sup> National Intellectual Property Management Office notice “South African Reserve Bank approval for transfer of intellectual property in favour of a person who is not resident in the Republic” dated 10-08-2016.

<sup>236</sup> as defined in s 1 of the Intellectual Property Rights from Publicly Financed Research and Development Act.

<sup>237</sup> Gidlow “The history of exchange controls in South Africa” 2002 *South African Journal of Economic Research* 25.

<sup>238</sup> Karjiker “Assignments of intellectual property to non-residents: the amended Exchange Control Regulations” (03-07-2012) The Anton Mostert Chair of Intellectual Property <http://blogs.sun.ac.za/iplaw/2012/07/03/assignments-of-ip-to-non-residents-the-amended-exchange-control-regulations/> (15-12-2017).

<sup>239</sup> Harms (n 76) 422.

<sup>240</sup> Harms (n 76) 422.

## 7.1 The practicalities and challenges

As unintentional as it may seem, undesirable legal uncertainty is created through many of the provisions in the legislation which have been critiqued. This uncertainty results in an inefficient use of resources due to an inordinate amount of human effort spent on attempts to interpret the meaning and implications.<sup>241</sup> It could also lead to costly litigation. The onus of compliance causes unwanted and undue formalities and time-consuming complications. It restricts universities in freely operating and causes delays in the negotiation and signing of research collaboration agreements – agreements without which much-needed and -desired funding, as well as global research collaboration opportunities for South African universities, could be lost.

## 7.2 The legal effect of non-compliance

No sanctions are prescribed in the event of non-compliance with the Intellectual Property Rights from Publicly Financed Research and Development Act, or where either the recipient or international collaborators fail to adhere to or meet any of its obligations. However, if approval for an intellectual property transaction that required approval from the National Intellectual Property Management Office was not obtained by a university, the provisions of this act and its regulations will render any transaction and relevant agreement between a party and the university void *ab initio*.<sup>242</sup> This in effect means that the contract creates no obligations and cannot be enforced.<sup>243</sup> If there was performance, restitution of what was performed will, in principle, be granted.<sup>244</sup>

A person is however guilty of an offence if that person contravenes or fails to comply with any provision of the Excon Regulations, knowingly or without guilty knowledge.<sup>245</sup> A person convicted of such an offence is liable to a fine not exceeding R250 000, or imprisonment for a period not exceeding five years, or to both such a fine and such imprisonment.<sup>246</sup> The only exception is where a person made an incorrect statement rendered for the purposes of these regulations and the person can then prove a reasonable lack of knowledge that the statement was incorrect.<sup>247</sup> The entering into a transaction in contravention of the contentious regulation 10(1) (c) would thus be unlawful and a criminal offence.<sup>248</sup> The Excon Regulations do not specifically state whether a transaction in contravention would be null and void. One of the basic principles of contract law is however that a valid agreement must be lawful to be enforceable.<sup>249</sup> The failure to obtain approval in terms of the Excon Regulations could in effect lead any agreement to be void and unenforceable from inception.<sup>250</sup> However, it is arguable that the agreement *per se* is not unlawful. It is not unlawful to transfer intellectual property rights to a foreign party: what is unlawful is the failure to obtain prior permission. That does not go to the root of the lawfulness of the obligation that is created, as would be the case with an agreement to pay for the commission of a murder. It may depend on the facts of a case before a

<sup>241</sup> Karjiker (n 238).

<sup>242</sup> reg 17 of the Intellectual Property Rights from Publicly Financed Research and Development Act.

<sup>243</sup> Hutchison, Pretorius and Du Plessis (n 138) 190.

<sup>244</sup> Hutchison, Pretorius and Du Plessis (n 138) 191.

<sup>245</sup> reg 22 of the Excon Regulations.

<sup>246</sup> (n 245).

<sup>247</sup> (n 245).

<sup>248</sup> Du Plessis *et al* (eds) (n 150) 384.

<sup>249</sup> Hutchison, Pretorius and Du Plessis (n 138) 181-182 and Du Plessis *et al* (eds) (n 150) 384.

<sup>250</sup> Du Plessis *et al* (eds) (n 150) 385.

specific court. In the *Couve* case the court found that the agreement in contravention was null and void and could not be ratified, whereas in the *Oil Well* case the court found that the invalidity of a transaction, in addition to a penalty, is too extreme. The judgment in the *Oil Well* case, a decision of the supreme court of appeal which thus overrules the *Couve* case, stated unequivocally that the agreement to assign a South African trade mark to a foreign party was not invalid, even if it was correct that prior approval should have been obtained for the signing of the agreement and a penalty was thus payable in the absence of such prior approval. This ruling was neither addressed nor disturbed in the amendment to regulation 10(1). It is submitted that the position as set out in the *Oil Well* case is thus the prevailing law.

From a risk management perspective it is however advisable that where any intellectual property transaction forms part of an agreement between a university and foreign collaborators, the legal representatives at universities include clauses in agreements to make provision for exchange control approval.<sup>251</sup> In summary, the major potential risks the non-compliance holds, besides criminal liability, are financial loss of funding income and legal cost. A university could also lose collaboration opportunities and suffer reputational damage, should an agreement be declared null and void.

### 7.3 Potential effects on research collaboration between South African universities and international entities

Although the critiques are primarily theoretical, it is clear that the excess of bureaucratic measures and state approvals overcomplicate and discourage researchers from applying for international funding and research opportunities. They have the potential to obstruct forging international relations, as they could lead to international funders and collaborators asking themselves whether it is worthwhile to do business with South African universities.<sup>252</sup> The conclusions presented need further evidence-based studies, however, to prove the true effects the legislation has on the research collaboration between South African universities and international entities.

## 8 Conclusion

International collaboration provides both research and funding opportunities and is vital for South African universities. To realise international collaboration, timeously concluded agreements act as instruments. When the said agreements, with their related intellectual property transactions, are negotiated, the legislative intellectual property regime of South Africa places an onus of compliance on universities. It appears that when the discussed legislation was drafted, the legislators mainly had patents in mind and neglected to take the other forms of intellectual property into consideration. This, and the fact that university research is often at the very early stages of development and still requires substantial development before commercial application, necessitates that the true commercial potential of these forms of intellectual property be considered and weighed against the social and other benefits of international research collaboration.

It is respectfully submitted that the current intellectual property regime places the emphasis on commercialisation and its benefits for South Africa, often at the

<sup>251</sup> Du Plessis *et al* (eds) (n 150) 385.

<sup>252</sup> Karjiker (n 238).

expense of international research collaboration. As a result, it limits access to knowledge required by a global knowledge economy.<sup>253</sup> These explicit and implicit barriers created through the legislation undermine the balancing mechanisms inherent in the notion of intellectual property protection.<sup>254</sup> Intellectual property protection and commercialisation may be financially advantageous, but have the potential to violate the principles of academic freedom.<sup>255</sup> Intellectual property protection is not supposed to restrain access to knowledge, as access is needed to allow others to build on prior knowledge and sustain creativity and innovation.<sup>256</sup> A careful balancing of the benefits intellectual property rights can offer to South Africa and the benefits of broadened knowledge dissemination is necessary and called for.<sup>257</sup> The unintentional practicalities and potential consequences of the legislation are weighty obligations and onerous administrative burdens on universities and their international collaborators, mostly due to the ambiguity and uncertainty. The legislation should instead be clear enough to allow for its consistent application. Where this is not the case, legal practitioners may argue about what interpretation should be followed, until a court makes a decision on what it believes is the correct interpretation. The preferred and unfortunate solution universities are left with is amendments to the relevant legislation. This could provide the clarity and certainty universities and their international collaborators are desperately seeking. It is crucial that the South African government takes care not to create barriers between its universities and international collaborators, by moving away from a one-size-fits-all approach to intellectual property and laws that are firmly grounded in economic policies.<sup>258</sup> If the regulatory regime is too restrictive, the objectives of the legislation will in effect be lost. Universities, in turn, need to be cognisant of the theories and debates on intellectual property rights and access to knowledge with respect to developing countries, such as South Africa.<sup>259</sup> This will assist in petitioning for amendments and intelligent approaches to intellectual property transactions, rather than mere legislative compliance.<sup>260</sup>

## SAMEVATTING

### IMMATERIËLE GOEDEREREG EN UNIVERSITEITE: DIE IMPAK VAN HUIDIGE SUID-AFRIKAANSE WETGEWING OP INTERNASIONALE NAVORSINGSAMEWERKING

Bo en behalwe onderrig, is navorsing een van die kernfunksies van Suid-Afrikaanse universiteite. Deur navorsing dra universiteite onder andere by tot globale kennisgenerering, innovasie, die opleiding van spesialiste en oplossings vir die gemeenskap, industrie en die regering. Verder word internasionalisering van universiteite gedryf deur hul navorsingsaktiwiteite. Kwynende regeringsbefondsing en studentefoioe, lei egter daartoe dat universiteite al hoe meer afhanklik raak van buitelandse befondsing vir hul beoogde navorsingsaktiwiteite. Nie net is internasionale samewerking belangrik vir die broodnodige befondingsgeleenthede wat dit bied nie, maar ook vir die samewerkingsgeleenthede met ander kenners en toonaangewende instansies. Hierdie internasionale samewerking en befondsing van

<sup>253</sup> Ncube, Abrahams and Akinsanmi (n 189) 285.

<sup>254</sup> Ncube, Abrahams and Akinsanmi (n 189) 285.

<sup>255</sup> Altbach "Peripheries and centres: research universities in developing countries" 2007 *Higher Education Management and Policy* 112 127.

<sup>256</sup> Ncube, Abrahams and Akinsanmi (n 189) 285.

<sup>257</sup> Chetty (n 145) 82.

<sup>258</sup> Chetty (n 145) 81.

<sup>259</sup> Chetty (n 145) 81.

<sup>260</sup> Chetty (n 145) 81.

navorsingsaktiwiteite word gewoonlik deur 'n kontrak tussen die partye gereël, waaronder immateriële goedere en die gepaardgaande regte aangespreek word.

Aangesien universiteite gedeeltelik deur publieke fondse befonds word, skryf Suid-Afrikaanse wetgewing, soos Wet 51 van 2008 en die Valutabeheerregulasies voor hoe die immateriële goedere hanteer moet word. Hierdie voorskrifte moet dan ook deur universiteite oorweeg en nagekom word, voor 'n kontrak met 'n internasionale samewerker gefinaliseer kan word. Die gevolge hiervan blyk gewigtige verpligtinge en administratiewe laste op universiteite en hul internasionale samewerkers te plaas, meestal weens die leemtes, dubbelsinnigheid en onsekerheid wat in hierdie wetgewing bestaan.

In hierdie bydrae word die impak en gevolge van die betrokke wetgewing ondersoek, bespreek en gekritiseer. Daar word betoog dat die wetgewer nie die aard van navorsing, die tipes immateriële goedereregte wat geskep word by universiteite en die onus van voldoening, behoorlik oorweeg het nie. Ten tye van ondertekening van 'n kontrak, is navorsing dikwels in baie 'n vroeë stadium wat aansienlike ontwikkeling vereis voor enige kommersiële toepassing daarvan kan geskied. Daar word aangevoer dat die huidige wetgewende bestel die klem plaas op kommersialisering en die voordele wat dit vir Suid-Afrika kan bied, ten koste van internasionale navorsingsamewerking.

Die outeurs betoog dat die ware kommersiële potensiaal van die betrokke immateriële goedere oorweeg en gemeet word teen die sosiale en ander voordele van internasionale navorsingsamewerking. Wysigings aan die wetgewing word voorgestel om eksplisiete en implisiete struikelblokke uit die weg te ruim en om duidelikheid, sekerheid en die konsekwente toepassing van die wetgewing te verseker.